

99 oscillation circuit means arranged with said exciting coil as an oscillation element;
first detector circuit means coupled to said oscillation circuit means for detecting at least one of amplitude, phase and frequency of an oscillation voltage in said exciting coil;
bridge circuit means arranged to include said receiving coils;
differential amplifier means connected to said bridge circuit means;
second detector circuit means for detecting an electromotive force signal influenced by a reactive magnetic field caused by eddy currents induced on a surface of the thrown coin an output of said second detector circuit means being connected to said differential amplifier means;
and
discriminating means connected to said first and second detector circuit means to discriminate a value of said thrown coin based upon at least one of amplitude, phase and frequency of said oscillation voltage and a surface pattern of the thrown coin from outputs of said first and second detector circuit means when the thrown coin acts in said electromagnetic field, and output a result of the discrimination.

REMARKS

Applicant has amended claims 1, 4, 6, 9, 11, 14, 16, 25 and 27. Also submitted herewith is a substitute specification with the proper upper margins and a statement that a substitute specification contains no new matter. Applicant respectfully submits that the amendments to the claims are supported by the application as originally filed and do not contain any new matter. Accordingly, the Office Action will be discussed in terms of the claims as amended.

The Examiner has first objected to the disclosure stating that the upper margin is not large enough. Submitted herewith is a substitute specification and a statement that a substitute specification contains no new matter. Applicant respectfully submits that the substitute specification has proper upper margins and respectfully requests that the Examiner withdraw his objection.

The Examiner has rejected claims 4, 9, 14 and 25 under 35 USC 112, second paragraph, as being indefinite. Applicant has amended these claims where indicated and respectfully submits that claims 4, 9, 14 and 25 comply with 35 USC 112, second paragraph.

The Examiner has rejected claims 1-27 under 35 USC 102 as being anticipated by Coinstar, stating that Coinstar discloses each and every element of Applicant's invention.

Applicant has carefully reviewed Coinstar and respectfully submits that Coinstar discloses the apparatus and method of the prior art which is described in Applicant's description of the related art. In particular, Coinstar fails to disclose detecting an electromotive force affected by a reactive magnetic field caused by eddy currents induced on a surface of the coin using the receiving coils so as to detect the surface pattern of the coin. As previously stated, Coinstar functions in the way of the prior art and merely detects the material, diameter and thickness of the coin by detecting a plurality of frequency components.

In view of the above, therefore, Applicant respectfully submits that all of the elements of claims 1-27 are not shown by Coinstar and claims 1-27 are not anticipated thereby.

The Examiner has rejected claims 1-27 provisionally under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of copending application No. 09/528,283.

Applicant acknowledges this is a provisional obviousness-type double patenting rejection, but if required will file a terminal disclaimer upon the issuance of application No. 09/528,283 and the existence of judicially created doctrine of obviousness-type double patenting based upon the issued claims.

Applicant further respectfully and retroactively requests a one month extension of time so as to respond to the Office Action and enclosed herewith is a check in the sum of \$110.00 as the fee.

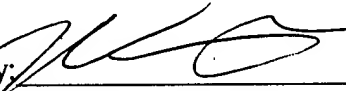
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

In view of the above, therefore, it is respectfully requested that this Amendment be entered, favorably considered and the case passed to issue.

Please charge any additional costs incurred by or in order to implement this Amendment or required by any requests for extensions of time to KODA & ANDROLIA DEPOSIT ACCOUNT NO. 11-1445.

Respectfully submitted,

KODA & ANDROLIA

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Assistant Commissioner for Patents
Washington D.C. 20231, on

January 29, 2002

Date of Deposit

William L. Androlia

Name

1/29/2002

Signature

Date



Application No. 09/528,282

VERSION WITH MARKINGS TO SHOW CHANGES MADE

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IN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A method of inspecting a coin thrown into a machine, comprising the steps of:

(a) arranging an exciting coil and a receiving coil in the vicinity of one side of a coin passage so that said exciting coil and said receiving coil are electromagnetically coupled with each other;

(b) exciting said exciting coil to oscillate at such a frequency that an [influence of] electromotive force influenced by a reactive magnetic field caused by eddy current induced on a surface of the thrown coin when the coin passes through an electromagnetic field produced by said exciting coil is detected by said receiving coil to determine a surface pattern of the thrown coin; and

(c) discriminating authenticity of the thrown coin based on at least one of amplitude, frequency and phase of an oscillation voltage of said exciting coil, and an electromotive force signal detected by said receiving coil.

Claim 4 has been amended as follows:

4. (Amended) A method of inspecting a coin according to claim 1, wherein said step (c) includes the steps of sampling said electromotive force signal in [every predetermined] a time period, and performing a statistical process based on the sampled values to determine a feature of the thrown coin.

Claim 6 has been amended as follows:

6. (Amended) A method of inspecting a coin thrown into a machine, comprising the steps of:

(a) arranging an exciting coil in the vicinity of one side of a coin passage inclined at a predetermined angle so that magnetic poles thereof face the coin passage;

(b) arranging two receiving coils with substantially identical characteristics in the vicinity of said one side of said coin passage so that said receiving coils are electromagnetically coupled with said exciting coil;

(c) exciting said exciting coil at a predetermined frequency to produce an electromagnetic field; and

(d) discriminating authenticity of the thrown coin based on at least one of amplitude, frequency and phase of an oscillation voltage of said exciting coil, and an electromotive force signal influenced by a reactive magnetic field caused by eddy currents induced on a surface of the thrown coin when the coin passes through said electromagnetic field and detected by said two receiving coils to determine a surface pattern of the thrown coin.

Claim 9 has been amended as follows:

9. (Amended) A method of inspecting a coin according to claim 6, wherein said step (d) includes the steps of sampling said electromotive force signal in [every predetermined] a time period, and performing a statistical process based on the sampled values to determine a feature of the thrown coin.

Claim 11 has been amended as follows:

11. (Amended) An apparatus for inspecting a coin thrown into a machine, comprising:

an exciting coil arranged in the vicinity of one side of a coin passage;

a receiving coil arranged in the vicinity of said one side of said coin passage so as to be electromagnetically coupled with said exciting coil;

oscillation means for [exiting] exciting and oscillating said exciting coil at a predetermined frequency to produce an electromagnetic field;

first detecting means for detecting at least one of amplitude, frequency and phase of an oscillation voltage of said exciting coil;

second detecting means for detecting an electromotive force signal influenced by a reactive magnetic field caused by eddy currents induced on a surface of the thrown coin when the coin passes through said electromagnetic field produced by said exciting coil and which is generated in said receiving coil; and

discriminating means for discriminating authenticity of the thrown coin based on detection outputs from said first and second detecting means;

whereby authenticity of the thrown coin is discriminated based on at least one of amplitude, frequency and phase of the oscillation voltage of said exciting coil, and an electromotive force signal detected by said receiving coil to determine a surface pattern of the thrown coin.

Claim 14 has been amended as follows:

14. (Amended) An apparatus for inspecting a coin according to claim 11, wherein said discriminating means samples said electromotive force signal in [every predetermined] a time period, and performs a statistical process based on the sampled values to determine a feature of the thrown coin.

Claim 16 has been amended as follows:

16. (Amended) An apparatus for inspecting a coin thrown into a machine, comprising:

an exciting coil arranged in the vicinity of one side of a coin passage inclined at a predetermined angle so that magnetic poles thereof face the coin passage;

two receiving coils having substantially identical characteristics and arranged in the vicinity of said one side of said coin passage so that said receiving coils are electromagnetically coupled with said exciting coil;

oscillation means for [exiting] exciting and oscillating said exciting coil at a predetermined frequency to produce an electromagnetic field;

first detecting means for detecting at least one of amplitude, frequency and phase of an oscillation voltage of said exciting coil;

second detecting means for detecting an electromotive force signal influenced by a reactive magnetic field caused by eddy currents induced on a surface of the thrown coin when the coin passes through said electromagnetic field and which is generated in said two receiving coils; and

discriminating means for discriminating authenticity of the thrown coin based on detection outputs from said first and second detecting means; and

whereby authenticity of the thrown coin is discriminated based on at least one of amplitude, frequency and phase of the oscillation voltage of said exciting coils, and an electromotive force signal detected by said receiving coil to determine a surface pattern of the thrown coin.

Claim 25 has been amended as follows:

25. (Amended) An apparatus for inspecting a coin according to claim 16, wherein said discriminating means samples said electromotive force signal in [every predetermined] a time period, and performs a statistical process based on the sampled values to determine a feature of the thrown coin.

Claim 27 has been amended as follows:

27. (Amended) An apparatus for inspecting a coin thrown into a machine, comprising:

an exciting coil arranged in the vicinity of one side of a coin passage inclined at a predetermined angle so that two magnetic poles thereof face the coin passage;

two receiving coils having substantially identical characteristics and arranged in the vicinity of said one side of said coin passage so that said receiving coils are electromagnetically coupled with said exciting coil;

oscillation circuit means arranged with said exciting coil as an oscillation element;

first detector circuit means [connected] coupled to said oscillation circuit means for detecting at least one of amplitude, phase and frequency of an oscillation voltage in said exciting coil;

bridge circuit means arranged to include said receiving coils;

differential amplifier means connected to said bridge circuit means;

second detector circuit means for detecting an electromotive force signal influenced by a reactive magnetic field caused by eddy currents induced on a surface of the thrown coin an output of said second detector circuit means being connected to said differential amplifier means; and

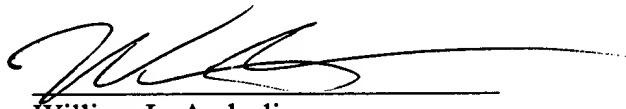
discriminating means connected to said first and second detector circuit means to [determine whether or not the thrown coin has a given feature] discriminate a value of said

thrown coin based upon at least one of amplitude, phase and frequency of said oscillation voltage and a surface pattern of the thrown coin from [based on] outputs of said first and second detector circuit means when the thrown coin acts in said electromagnetic field, and output a result of the discrimination.

DECLARATION

I, WILLIAM L. ANDROLIA, declare that I am the attorney of record for Applicant and the attached papers are true copies of the application Serial No. 09/528,282 filed on March 17, 2000.

Dated: 1/29/02



William L. Androlia
Reg. No. 27,177

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